

REMARKS

I. Introduction

Claims 4 and 5 are pending. In view of following remarks, it is respectfully submitted that claims 4 and 5 are allowable, and reconsideration is respectfully requested.

Applicants note with appreciation the acknowledgment of the claim for foreign priority. However, it is noted that the Office Action Summary does not sufficiently acknowledge receipt of the certified copy of the priority document. Accordingly, Applicants respectfully request acknowledgment of receipt of the certified copy of the priority document in the next Office communication.

II. Rejection of Claims 4 and 5 Under 35 U.S.C. § 102(e)

Claims 4 and 5 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent Application Publication No. 2002/0108713 (“Hanawa et al.”). It is respectfully submitted that Hanawa et al. do not anticipate the present claims for at least the following reasons.

To reject a claim as anticipated under 35 U.S.C. § 102, the Office must demonstrate that each and every claim feature is identically described or contained in a single prior art reference. (*See Scripps Clinic & Research Foundation v. Genentech, Inc.*, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991)). As explained herein, it is respectfully submitted that the Office Action does not meet this standard, for example, as to all of the features of the claims.

Claim 4 relates to a method for anisotropic plasma etching of a substrate, the method comprising: generating, with a plasma source that is configured to generate a high-frequency electromagnetic alternating field, a plasma having reactive species inside a chamber in a reaction region by the action of the alternating field upon an etching gas inserted into the reaction region and a passivating gas inserted into the reaction region; in the reaction region, inserting the etching gas predominantly into a first zone and inserting the passivating gas predominantly into a second zone; generating a reactive etching gas species in the first zone by using a plasma that is generated there, and generating reactive passivating gas species in the second zone by using a plasma that is generated there, whereby etching species and passivating species are generated at least largely independently of one another; and mixing the etching gas species and the passivating gas species with each other in a mixing region downstream from the reaction region before their action upon the substrate,

wherein a quantity of the passivating gas that is used is minimized compared to a quantity of the etching gas.

Consequently, claim 4 states that etching gas is predominantly present in the first zone of the reaction region and passivating gas is predominantly present in the second zone of the reaction region, that plasma is generated in the reaction region and produces reactive etching gas species and reactive passivating gas species in the reaction region, that etching species and passivating species are generated at least largely independently of one another, and that the reactive etching gas and passivating gas species are mixed in a mixing region downstream from the reaction region before acting upon the substrate.

Hanawa et al. provide for a plasma to be formed in a plasma source chamber 100 and enter a process chamber 12 through a top port 71. Other gases may enter the process chamber 12 through a side port 70. The apparatus of Hanawa et al. also includes a bias plasma system 30 which, in contrast to the statement on page 3, lines 7 to 11 of the Office Action, does not generate a plasma but rather creates a potential difference at a substrate support member 74 to cause the plasma to move electrodynamically in a direction normal to the substrate 32 (see paragraph [0028]). Thus, in the apparatus of Hanawa et al., plasma is only generated in plasma source chamber 100.

If the plasma source chamber 100 of Hanawa et al. were to be equated with a reaction region, then Hanawa et al. would not anticipate claim 4 for the following reasons. First of all, the plasma source chamber 100 of Hanawa et al. does not include first and second zones for an etching gas and passivating gas, respectively, as required by the feature recited in claim 4. Thus, to form reactive species of these two gases in the plasma source chamber 100, they would have to be mixed together and would form reactive etching species and passivating species in the same space, and not largely independently of one another. Secondly, these reactive etching gas species and passivating gas species would mix in the reaction region, and not in a mixing region downstream from the reaction region, as required by the feature recited in claim 4.

If the process chamber 12 of Hanawa et al. were to be equated with a reaction region, then Hanawa et al. would not anticipate claim 4 for the following reasons. First of all, one of the etching gas and passivating gas would have to be passed through the plasma source chamber 100 to form a reactive species. The other gas would have to enter the process chamber 12 through side port 70 and react with the plasma from plasma source chamber 100 to form a reactive species in the process chamber 12. Thus, in this case, only one reactive species would be formed in process chamber 12, and not both as required by the feature

recited in claim 4. Secondly, the reactive etching gas species and passivating gas species would be mixed in the reaction region, and not downstream from the reaction region as required by the feature recited in claim 4. Therefore, it is respectfully submitted that Hanawa et al. do not anticipate claim 4 for at least the foregoing reasons.

Claim 5 recites features substantially analogous to claim 4 with respect to generating reactive etching gas species in a first zone and reactive passivating gas species in a second zone of a reaction region, with respect to etching species and passivating species being generated at least largely independently of one another, and with respect to etching gas species and passivating gas species being mixed in a mixing region downstream from the reaction region. Therefore, it is respectfully submitted that Hanawa et al. do not anticipate claim 5 for at least the same reasons more fully set forth above in support of the patentability of claim 4.

In view of all the foregoing, withdrawal of this rejection is respectfully requested.

V. Conclusion

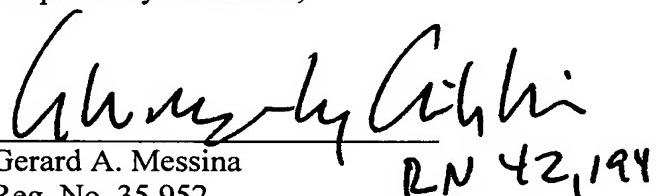
In view of the foregoing, it is respectfully submitted that all of the presently pending claims are allowable. It is therefore respectfully requested that the rejection be withdrawn, since it has been obviated. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is respectfully requested.

Respectfully submitted,

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